

environment. The inhabitants here have no idea of pulling the animal out of its hole by its ears as the Surchashma boys sometimes do; they usually shoot them. Almost every man possesses a matchlock to guard his family but, since cartridges are difficult to procure in these remote regions, the hunters carry with them a quantity of powder and a lead wire. Whenever required they load up with some powder, add pieces of lead cut from the wire, and shoot. In this way they shot several pikas for me. They are good marksmen and hardly ever miss.

During a talk the inhabitants complained of the pikas being a great menace to their cultivation. They remarked that some English people had introduced these creatures (which they call 'mushai') into the country from some foreign land a century ago. As proof of this they added that certain Englishmen were used to visiting these parts very often in order to look after the animals and to ascertain their welfare!

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#### 6. A NOTE ON INSECTS CONSUMED AS FOOD BY SQUIRRELS AND BIRDS AT KUNDRI FOREST, PALAMAU DISTRICT, BIHAR

With a view to ascertain the agencies responsible for a new type of damage to living lac cells observed at Kundri forest, Palamau District, Bihar, a large number of squirrels and birds found on the lac-bearing trees at the time of occurrence of the damage were shot and their stomach contents examined for the presence of lac insects. During the examination a large number of insects besides the lac insects were also encountered and this note records the species of insects consumed as food by these animals.

It is seen from the results that besides lac insects, termites, ants, grasshoppers, beetles, lepidopterous larvae and moths, bugs, wasps, lice, and mites were traced in the stomach contents.

**Lac Insects:** These are consumed freely by the common Five-striped Squirrel (*Funambulus pennanti* Wroughton) and to some extent by the Goldenbacked and Mahratta woodpeckers and the Redvented Bulbul. The number of each of these bird species was comparatively small in the area and they were found distributed throughout the forest; whereas the squirrels were more common and seen in greater concentration in the coupe that was under lac infection. Further, the fact that 23 squirrels out of the 36 examined contained lac insects ranging between 1 and 134 establishes beyond doubt that the squirrels are responsible for the huge destruction of lac insects at maturity of the lac crop in summer.

**Termites:** The mound-building termite species *Odontotermes obesus* (Rambur) which attacks *palas* trees (*Butea monosperma*) was

## INSECTS CONSUMED AS FOOD BY SQUIRRELS AND BIRDS

Name of animal	No. of Stomachs Examined		Lac insect		Termite		Ant		Grass-hopper		Beetle		Lepidopterous larvae		Moth		Bug		Wasp		Louse		Mite				
	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	Average	No. in which found	Range	
Squirrel	36	23 1-134	32.9	35	23-834	244	1	...	2	...	...	2	...	1	9 1-54	8.4	1	...	1	...	2	...	1	...	1	...	1
Goldenbacked Woodpecker...	10	4 1-11	6	3	6-609	279.3	5	12-340	98	...	1	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...
Mahratta Woodpecker...	11	1	22	2	21-52	36.5	3	2-55	28.5	...	4	2-4	3	2-32	12	1	...	1	...	...	...	...	...	...	...	...	...
Redvented Bulbul...	5	1	5	5	...	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coppersmith Indian Pitta	3	1	...	...	...	...	1	Few*	...	...	1	Few*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Wood Shrike	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Jungle Babbler.	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Small Minivet.	6	1	...	...	...	290	2	...	7	1	1	6	1-5	3	...	1	...	1	...	...	...	...	...	...	...	...	...
House Sparrow.	3	1	...	...	...	49	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Common Iora.	2	...	...	...	...	...	...	...	...	...	...	2	Few*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rufousbacked Shrike...	3	...	...	...	...	...	...	...	...	3	1-2	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...
King Crow	2	...	...	...	...	...	...	...	...	...	2	Some*	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Common Weaver-bird...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Common Myna.	2	...	...	...	...	...	2	...	7	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Golden Oriole...	1	...	...	...	...	...	1	...	...	...	2	1	Some*	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Crow-Pheasant.	1	...	...	...	...	...	1	Some*	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

\* The terms ' Few ' and ' Some ' indicate a rough quantitative estimate, as the exact counts were not made.

found to have been taken in large numbers by 35 out of the 36 specimens of squirrels examined, as many as 834 being found in one specimen. All the forms of the termite colony except the Queen were found as stomach contents, of course the workers being in far larger numbers than the soldiers. This indicates that the squirrels play a not insignificant role in the natural control of termites. Among the birds, the two woodpeckers, the Redvented Bulbul, the Small Minivet, and the House Sparrow had consumed the termites in fair numbers.

**Ants:** Species of ants comprising *Camponotus compressus* and *Solenopsis geminata* were found in considerable numbers in the stomach contents of the two species of woodpeckers and to some extent of the Crow-Pheasant, Small Minivet, Indian Pitta and Common Myna. In one specimen of squirrel two ants were traced which might have been taken in accidentally.

**Grasshoppers:** Grasshoppers were found in the stomachs of the Jungle Babbler, Small Minivet, Rufousbacked Shrike, Common Myna, and the Crow-Pheasant. The grasshoppers being bigger in size must have been deliberately picked as food, although they were found in fewer numbers.

**Beetles:** Beetles were found in the stomachs of the squirrels, the two woodpeckers, Indian Pitta, Small Minivet, Common Iora, Rufousbacked Shrike, King Crow and the Common Myna. While they might have been consumed as food in the case of birds, their entry into the stomach of squirrels appears to be only accidental.

**Larvae and Moths:** The lepidopterous larvae were traced in fairly good numbers in nine specimens of squirrels and 3 of the Mahratta Woodpecker, suggesting that these larvae are deliberately sought after as food. A single specimen of an adult moth was seen in one squirrel and another in Mahratta Woodpecker.

**Bugs:** The bugs had been consumed in very small numbers by one specimen each of the Goldenbacked Woodpecker and the Small Minivet.

**Other Insects and Mites:** Wasps, lice, and mites were detected as stray items only in a few specimens of the squirrels, having been taken in accidentally.

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